DMITRASHKO, I.

In the Research Institute of Labor. Vop. ekon. no.12:149-151 D '61. (MIRA 14:11)
(Labor and laboring classes--Research)

DMITRASHKO, I.

Scientific research plan of the Labor Institute for 1961. Biul. nauch. inform.: trud i zar. plata 4 no.1:3-10 '61. (MIRA 14:3)
(Industrial management—Research) (Labor and laboring classes—Research)
(Wage payment systems—Research)

DMITRASHKO, I.; LUKIN, B.

Using a piecework bonus wage system on state farms. Biul. nauch. inform.: trud i zar. plata 5 no.2:45-50 '62. (MIRA 15:2)
(Agricultural wages)

DMITRASHKO, I.

Economic efficiency of the new forms of labor organization on collective farms. Vop. ekon. no.11:66-76 N '62. (MIRA 15:11)
(Collective farms—Management)

VDOVICHENKO, N.Kh.; DMITRASHKO, I.I., kand. tekhn. nauk; ZHELUDKOV, A.P.; ZLOMANOV, L.P.; KALPIN, G.Z.; NIZHNYY, N.I.; NIKITINA, M.V.; ROMANENKO, I.N.; BUDARINA, V., red.; USTINOV, M., red.; KIRSANOVA, I., mladshiy red.; NOGINA, N., tekhn. red.

[Agricultural wages in the U.S.S.R.] Oplata truda v sel'skom khoziaistve SSSR. [By] Vdovichenko, N.Kh. i dr. Moskva, Sotsekgiz, 1962. 147 p. (MIRA 15:6)
(Agricultural wages)

DMITRASHKO, Ivan Ivanovich; CHERNOVA, L.P., red.; ZORINA, V.A., tekhn. red.

[Conversion of surplus value into profit, percentage and rent] Prevrashchenie pribavochnoi stoimosti v pribyl', protsent i rentu; v pomoshch studentam zaochnogo i vechernego obucheniia. Pts.1/2. 1963. 79 p. (MIRA 17:1)

DMITRASHKO, Ivan Ivanovich, kand. ekon. nauk; SHULEYKIN, P.A., red.

[Specialization within a collective farm] Vnutrikolkhoznaia spetsializatsiia. Moskva, Znanie, 1965. 70 p. (Narodnyi universitet: Sel'skokhoziaistvennyi fakul'tet, no.7) (MIRA 18:7)

DMITRASHKO, P. I.

Yeast

Increasing the resistance of yeast to alcohol. Vin. SSSR 12 no. 5 (1952)

Monthly List of Russian Accessions, Library of Congress, August, 1952. UNCLASSIFIED.

USSR / Cultivated Plants. Plants for Technical Use. M-6
Sugar Plants.

Abs Jour: Ref Zhur-Biol., 1958, No 16, 73049.

Author : Dmitrashko, P. I.
Inst : Odessa University.
Title : Study of Growth and Development of Several New Blast Crops in Odessa.

Orig Pub: Nauchn. yezhegodnik. Odessk. un-t, 1956, Odessa, 1957, 282-284.

Abstract: Abutilon, Crotalaria L., sesbania, Althea L, milkweed (Asclepias L.), Indian hemp, Chinese white, annual and perennial Sida L. have been raised since 1955 at the Botanical Garden of the University from seeds obtained from different scientific establishments of the USSR. Almost all plants were raised

Card 1/2

DMITRASHKO, P.I. [Dmytrashko, P.I.], dots.

Effect of the conditions of cultivation on yeast. Pratsi Od. un. Ser.biol.nauk no.8(vol.147):89-94 '57. (MIRA 12:4)
(Yeast)

DMITRASHKO, P.I. [Dmytrashko, P.I.], dots.

Prickly marrow, a valuable fiber plant. Na dopom.sil'. hosp.ta vyr. no.5:25-28 '58. (MIRA 13:3)

1. Kafedra genetiki i darvinizma Odesskogo gosuniversiteta. (Mallow)

DMITRENKO, A., zamestitel' predsedatelya soveta radioklubа.

What interferes with the development of radio amateurs' activities.
Radio no.12:12 D '53. (MLRA 6:12)
(Radio clubs)

DMITRENKO, A.M.

Stimulation of the cardiac activity from venae cavae. Fiziol. zhur. 51 no.8:1017-1020 Ag '65. (MIRA 18:7)

1. Kafedra normal'noy fiziologii Meditsinskogo instituta, Dnepropetrovsk.

DMITRENKO, A.M.

I disagree with comrade Bagin. Put' i put.khoz. 8 no.4:44 '64.
(MIRA 17:4)

1. Zamestitel' nachal'nika distantsii puti, stantsiya Sarepta, privolzhskoy dorogi.

DMITRENKO, D.A.; CHIKIN, A.I.

Spectral line width of certain low-frequency and radio-frequency oscillators. Izv.vys. ucheb.zav.; radiofiz. 6 no.6:1271-1273 '63. (MIRA 17:4)

1. Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete.

L 8895-65 EEO/EWT(1)/EWG(v)/EEC-4/EEC(t) Pc-4/Pe-5/P1-4/Pae-2 ESD(t)/ESD/
AEDC(a) GW/WS

ACCESSION NR: AP4044110 S/0141/64/007/003/0555/0556

AUTHOR: Dmitrenko, D. A.; Kamenskaya, S. A.; Rakhlin, V. L.

TITLE: The results of measuring radio emission from the Moon at λ = 16 cm

SOURCE: IVUZ. Radiofizika, v. 7, no. 3, 1964, 555-556

TOPIC TAGS: lunar radiation, artificial Moon, modulation radiometer, lunar temperature, lunar phase

ABSTRACT: A superheterodyne modulation radiometer with an input parametric amplifier was used to measure the lunar phase in the autumn of 1962 in the Crimea at λ = 1.6 cm. The threshold of radiometer sensitivity was 0.15K at an output-meter time constant of T = 16 sec. The antenna system consisted of a parabolic reflector 1.5 m in diameter and an exciter for the reception of horizontally polarized waves. The width of the antenna radiation pattern was 49 minutes at the 3-db level. To compensate for the background signal, the second input of the radiometer was connected to a horn radiator

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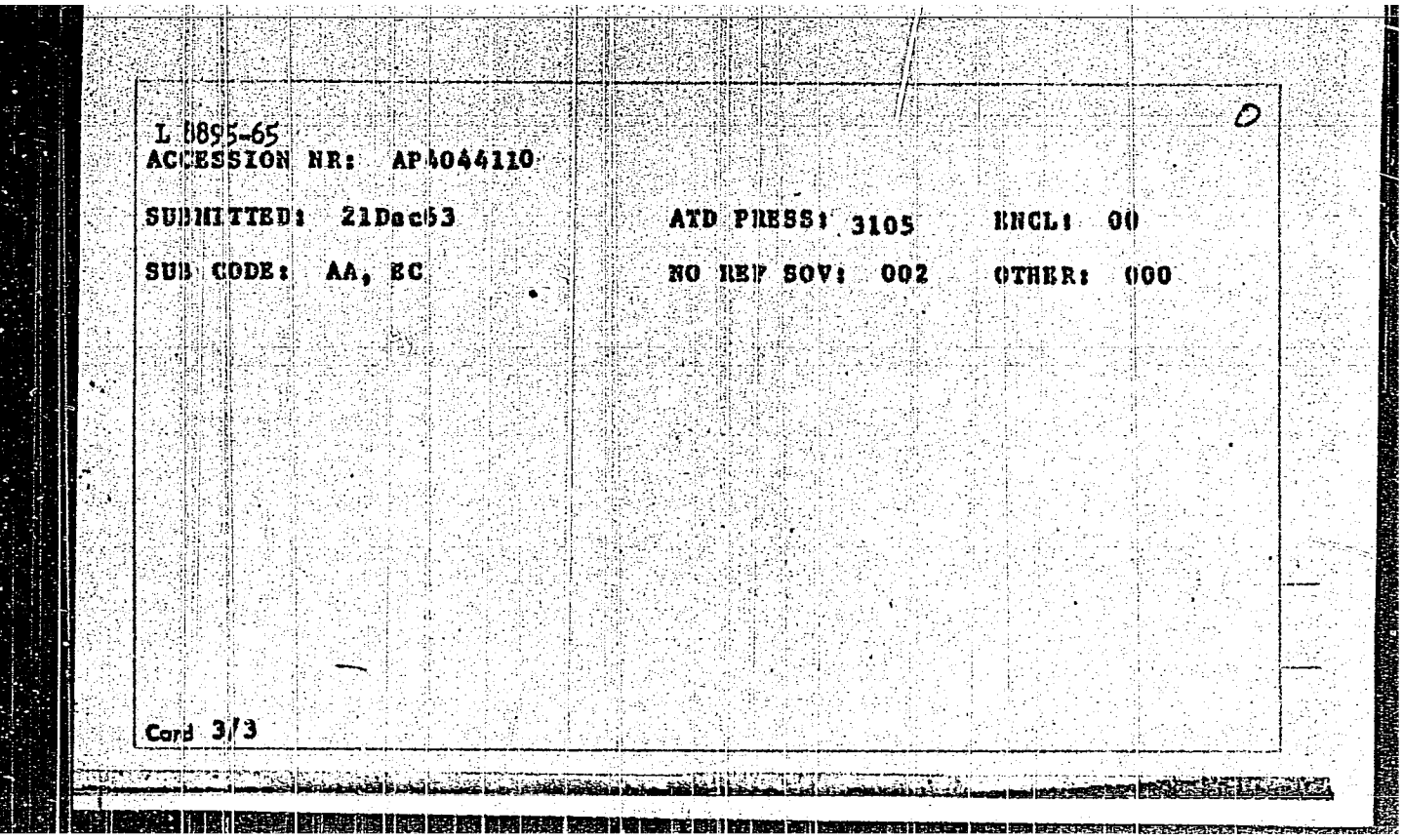
ACCESSION NR: AP4044110

directed toward the zenith. The radio emission of the Moon was compared to that of the black standard disc located in the Fraunhofer region of the antenna at an elevation of 19 degrees and distance from the telescope of 142.4 m. The diameter of the black standard disc was selected in such a way that its angular dimensions were close to the average angular dimension of the Moon. The results of measurements obtained during two lunations show that the phase relationships of lunar radio emission temperature is sufficiently well approximated by the expressions $T = 207° + 33° \cos(\Omega t - 8°)$ for the period 2 September — 2 October 1962, and $T = 207° + 34° \cos(\Omega t - 18°)$ for the period 2 October — 2 November 1962. The error in the variable component was ± 4%. The error in determining the constant component did not exceed ± 3%. The error in determining the phase was 10 to 20 degrees. Orig. art. has: 1 formula.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut, Gor'kovskiy gosudarstvennyy universitet (Scientific Research Institute of Radiophysics, Gor'kiy State University)

Card 2/3

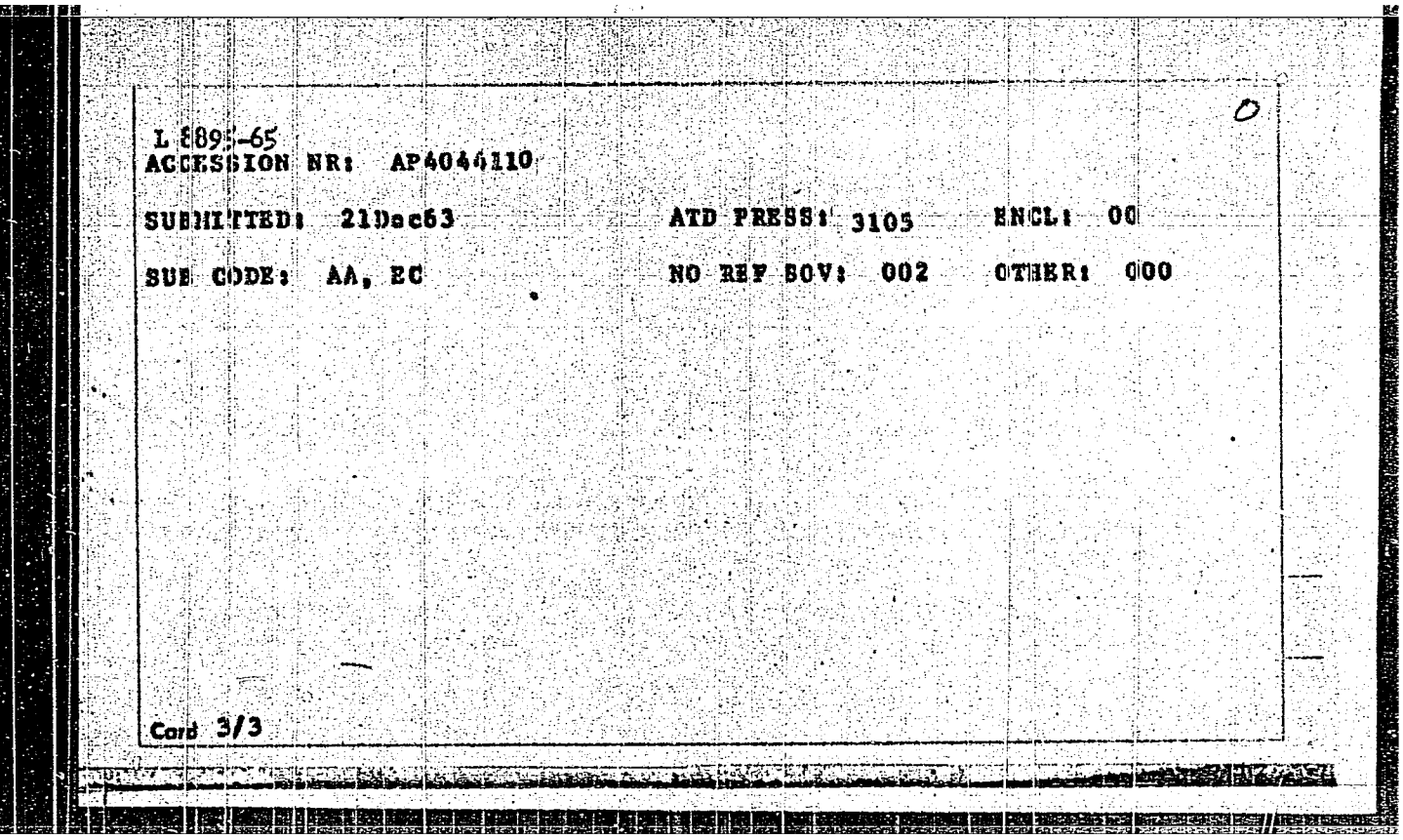


L 0895-65
ACCESSION NR: AP4044110

SUBMITTED: 21Dec63 ATD PRESS: 3105 ENCL: 00

SUB CODE: AA, EC NO REF SOV: 002 OTHER: 000

Card 3/3



L 8895-65
ACCESSION NR: AP4044110

SUBMITTED: 21Dec63 ATD PRESS: 3105 ENCL: 00

SUB CODE: AA, EC NO REF SOV: 002 OTHER: 000

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L 41365-65 EWT(1)/FBD/EWG(m)/EEC-4/EEC(t) Pe-5/Pae-2/Pi-4 GW/WS-4
ACCESSION NR: AP5002312 S/0141/64/007/005/0817/0821

AUTHOR: Dmitrenko, D. A.; Krotikov, V. D.; Troitskiy, V. S.; Tseytlin, N. M. 31 30 B

TITLE: Absorption of 70.17 cm radio emission in the atmosphere

SOURCE: IVUZ. Radiofizika, v. 7, no. 5, 1964, 817-821

TOPIC TAGS: radio astronomy, radio emission, atmospheric absorption

ABSTRACT: In view of the lack of published data on the coefficient of absorption of radio waves longer than 60 cm in the atmosphere, the authors undertook in September 1963 measurements of 70.16 cm waves in the atmosphere by receiving the atmosphere's own radio emission at different angles of inclination to the horizon. A formula is derived for the absorption in terms of the measured increments of the antenna temperature as the antenna is inclined at different angles. "Sections" through the atmosphere were plotted in the southern direction, during hours when high galactic lattitudes (> 30°) passed through the principal lobe of the antenna directivity pattern. This made it possible to neglect the variation in the cosmic background. The antenna was calibrated against the radio emission from the moon.

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L 41365-65
ACCESSION NR: AP5002312

The value obtained for the absorption of the atmosphere is 0.0092 ± 15%, and agrees with measurement results made at NIRFI in the 30--60 cm band. It is pointed out that the value 0.003 derived for the absorption from the Van Vleck theory is 1/3 the measured value. Orig. art. has: 2 figures and 15 formulas.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete (Scientific Research Radiophysics Institute at the Gor'kiy University)

SUBMITTED: 19Dec63 ENCL: 00 SUB CODE: AA, EC

NR REF SOV: 009 OTHER: 000

Card 2/2

DMITRENKO, F.S.

Experiment in cultivating certain wild forage plants at the scientific research station of the Institute of Botany of the Academy of Sciences of the Ukrainian S.S.R. Bot.zhur. [Ukr.] 12 no.4:121-122 '55. (MLRA 9:3)

(Ukraine--Forage plants)

DMITRENKO, G.A.

Sensitive magneto-semiconductor measuring d.c. to frequency converter. Izm. tekh. no.6:26-29 Je '63. (MIRA 16:8)

(Electronic instruments)

DMITRENKO, G.S. [Dmytrenko, H.S.]; LANGERMAN, Ye.U. [Lanherman, IU.U.]

Remodeled densitometer for hot disodium phosphate solutions. Khim. prom. [Ukr.] no.2:77-78 Ap-Je '65. (MIRA 18:6)

KULAKOV, O.I.; DMITRENKO, G.S. [Dmytrenko, H.S.]

Automatic control of the SO_2 content of gas by its temperature.
Khim.prom. [Ukr.] no.2:80 Ap-Je '65.
(MIRA 18:6)

DMITRENKO, G. Ye.

Possible types of the reciprocal systems consisting of 12 salts A,B,C || X,Y,Z,T. Zhur neorg. khim. 9 no.6:1508-1510 Je '63 (MIRA 17:8)

Steps of stable diagonal lines in the senary reciprocal system consisting of 12 salts L,M,N || X.Y.Z.T. Ibid.:1511-1514

1. Kiyevskiy tekhnologicheskiy institut pishchevoy promyshlennosti.

DMITRENKO, G.Ye. [Dmytrenko, H.IU.]; PERVIKOVA, V.N. [Pervikova, V.M.]

Representation of polyhedrons of the composition of multicomponent reciprocal systems. Dop. AN URSR no.4:481-484 '65.

(MIRA 18:5)

1. Kiyevskiy tekhnologicheskiy institut pishchevoy promyshlennosti.

GNEZDILOVA, Ye.I.; DMITRENKO, I.I.; LARIONOVA, V.S.; NAVROTSKAYA, V.S.

Characteristics of the temperature regime during dry periods in the steppe of the Black Sea region. Trudy OGMI no.21:21-26 '60. (MIRA 14:10)

(Black Sea region—Droughts)

DMITRENKO, I. P., and USHENKO, I. K.

α,γ -Dimethylene Thiocarbocyanines Having Methoxy- Groups in the Benzene Ring. page 650. Sbornik/po obshchey khimii (Collection of Papers on General Chemistry), Vol 1, Moscow-Leningrad, 1953, pages 762-766. stately

Inst of Organic Chemistry, Acad Sci Uk SSR

SHPAK, M.T.; SOLOV'YEV, A.V. [Solovyov, A.V.]; SHEREMET, N.I.; DMITRENKO, I.P. [Dmytenko, O.P.]

Spectra investigation of chemical transformations in crystalline triphenylmethane. Ukr.fiz.zhur. 7 no.4:422-429 Ap '62. (MIRA 15:8)

1. Institut fiziki AN UkrSSR, g. Kiyev.
(Methane) (Chemical reactions)

VERKIN, B.I.; DMITRENKO, I.M.

Anisotropy of magnetic properties of monocrystals of zinc at low temperatures. Izv.AN SSSR.Ser.fiz.19 no.4:409-428 Jl-Ag '55. (MLRA 9:1)

1.Fiziko-tekhnicheskiy institut Akademii nauk USSR.
(Metals at low temperatures)

DMITRENKO, I. M.

USSR/ Physics

Card 1/1 Pub. 22 - 10/51

Authors : Verkin, B. I.; Dmitrenko, I. M.; and Mikhaylov, I. F.

Title : Fine structure of the " phenomenon of a complex periodical dependence of the magnetic susceptibility of metals upon the field at low temperatures

Periodical : Dok. AN SSSR 101/2, 233-236, Mar 11, 1955

Abstract : The magnetic properties of Mg, Zr and Be monocrystals were investigated at an interval of 1500 to 20000 oersteds and temperature of ~ 4.2° K for the purpose of finding a simple interpretation for the "structure" of the phenomenon of a complex periodical dependence of the magnetic susceptibility of metals upon the magnetic field at low temperatures. The results obtained are discussed. Eight references: 2 English and 6 USSR (1938-1954). Graphs.

Institution : Academy of Sciences, Ukr SSR, Physico-Technical Institute

Presented by: Academician L. D. Landau, October 2, 1954

DMITRENKO, I.M. VERKIN, B. I., LAZAREV, B. G., MIKHAYLOV, I . F., (Kharkov)

"Magnetic Properties of Non-Ferromagnetic Metals at Low Temperatures," a paper submitted at the International Conference on Physics of Magnetic Phenomena, Sverdlovsk, 23-31 May 56.

DMITRENKO, I. M.

120-2-25/37

AUTHOR: Dmitrenko, I. M.

TITLE: Automatic Instrument for Measuring Magnetic Anisotropy. (Avtomaticheskiy Pribor dlya Izmereniya Magnitnoy Anizotropii.)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1957, No. 2, pp. 89 - 93 (USSR).

ABSTRACT: Amongst elements of groups II, III, IV and V, there are many dia- and paramagnetic metals exhibiting de HaasvanAlphen effect (Refs. 1 - 4). The differences in the diamagnetic susceptibilities $\Delta\chi$ of the metals depend in a "periodic" manner on the magnetic field intensity, oscillating around a certain value with increase of the magnetic field as shown on Figure 5. In the present article the author describes an instrument with automatic compensation action and automatic presentation of the results of measurement of the susceptibility as a function of the reciprocal of the field $1/H$. The instrument, the schematic diagram of which is shown on Figure 1 is based on the normal bridge dividing chain (Equation 2). If the resistance R_3 is made proportional to the magnitude of an independently measured moment, the resistance R_4 proportional to the square of the also independently measured magnetic field H and the resistance R_2 is made

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Automatic Instrument for Measuring Magnetic Anisotropy.

a calibrating resistance, then the value of the resistance R_1 will be proportional to the value of the dia-magnetic susceptibility, as can be clearly seen from Equations 1 and 2. As shown in Figure 1 the measurement of the magnetic field is made using a magnetic field generator 5 of the type used in the mass spectrometer MS-4 (MC-4). A transducer 6 converts the magnitude of the magnetic field into the angle of rotation proportional to the magnetic field (Ref. 6). Division is achieved on the bridge circuit 7 consisting of resistances R_M, R_H, R_C and $R_{\Delta\chi}$. The shift proportional to M(moment with respect to the axis of forces acting on the crystal) is transmitted to the resistance R_M, the magnitude of which is therefore proportional to M. The displacement proportional to H(external magnetic field intensity) is applied to a specially shaped resistance R_{H2}. The magnitude of the thus introduced resistance is proportional to the square of the magnetic field intensity H. As a null detector, a chopper amplifier type Rd-09 (Рд-09), as applied in electronic potentiometers EPP-09 (ЭПП-09), is used. The unbalanced bridge signal is applied to a DC amplifier 10, as described in Reference 8 and which uses tubes 6N9S (6H9C). The external view of the instrument is shown on Figure 2. The internal view

Automatic Instrument for Measuring Magnetic Anisotropy.

on Figure 3. Certain details of resistances and of the power supply are given. The control measurements have been made using a single crystal of bismuth shaped in such a way that its binary axis coincided with the axis of suspension. The results obtained were in very good agreement with those obtained by other authors (Ref. 9). N. S. Dogadina, A. N. Karushi, A. P. Sheynin and M. N. Massalitina were responsible for the mechanical design of the instrument. There are eleven references of which seven are Slavic.

SUBMITTED: November, 16, 1956.

ASSOCIATION: Physical and Technical Institute of the Academy of Sciences USSR. (Fiziko-Tekhnicheskiy Institut AN USSR).

AVAILABLE: Library of Congress.

Card 3/3

DMITRENKO, I.M.

AUTHOR DMITRENKO, I.M., VERKIN, B.I., LAZAREV, B.G. 56-7-53/66
TITLE The Influence Exercised by Pressure from all Sides upon the Magnetic Properties of a Zinc Monocrystal at low Temperatures.
(Vliyaniye vsestoronnego szhatiya na magnitnyye svoystva monokristallov tsinka prinizkikh temperaturakh).
PERIODICAL Zhurnal Eksperim. i Teoret. Fiziki 1957, Vol 33, Nr 7, pp 287-289 (USSR)

SOV/137-58-10-21475D

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 144 (USSR)

AUTHOR: Dmitrenko, I. M.

TITLE: Effect of Omnidirectional Compression on the Magnetic Properties of Metals at Low Temperatures (Vliyaniye vsestoronnego szhatiya na magnitnyye svoystva metallov pri nizkikh temperaturakh)

ABSTRACT: Bibliographic entry on the author's dissertation for the degree Candidate of Physical-Mathematical Sciences, presented to the Khar'kovsk. un-t (University of Khar'kov), Khar'kov, 1958

ASSOCIATION: Khar'kovsk. un-t (University of Khar'kov), Khar'kov

1. Metals--Magnetic properties 2. Metals--Temperature factors
3. Pressure--Magnetic effects

Card 1/1

AUTHORS: Verkin, B. I., Dmitrenko, I. M. SOV/56-35-1-47/59

TITLE: The Influence of Uniaxial Elastic Deformations on the Magnetic Properties of Zink Crystals at Low Temperatures (Vliyaniye odnoosnykh uprugikh deformatsiy na magnitnyye svoystva kristallov tsinka pri nizkikh temperaturakh)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol. 35, Nr 1, pp. 291 - 293 (USSR)

ABSTRACT: It was of great interest to investigate the influence of the uniaxial elastic deformations of a lattice on the Haas (Gaaz) - Van Alfvén (van Al'fen) effect in zink crystals in order to obtain a relation between the variation of the number of the charges in a group with an anomalously low number, and the sign of the change of c/a. c/a denotes the ratio of the crystal axes. A figure shows the apparatus for the elastic uniaxial compression or expansion of zink crystals. First the anisotropy of the magnetic properties of a non-strained zink crystal was investigated. This anisotropy was then measured for uniaxially expanded and uniaxially compressed crystals. Two diagrams demonstrate the results of the measurements, i.e. the periods T of

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the oscillations of the susceptibility (which are caused by the "low-number group of the charges" (malochislennaya gruppa zaryadov) and the influence exercised by the uni axial elastic compression of the zink crystals on the form of the curves $\Delta\chi(1/H)$. The second diagram demonstrates also the straight lines n(1/H) which determine the period of the oscillations of the susceptibility of free and compressed crystals. The uniaxial compression of zink crystals in the interval $\theta \leqslant 30^\circ$ increases the period of the susceptibility oscillation by 4 - 5%. θ denotes the angle between the field vector $\vec{H}$ and the principal axis of the crystal. If θ increases, the increase of the oscillation period becomes slower. At $\theta = 70^\circ$ this period is not changed, and at $\theta = 80^\circ$ the oscillation period decreases slightly ($\Delta T/T \sim 1\%$). A uniaxial expansion of zink crystals in the interval $\theta \leq 30^\circ$ reduces the period of the susceptibility oscillations by 2 - 3%. The amplitude of the susceptibility oscillations is diminished several times by a uniaxial elastic deformation of the crystal. A decrease (increase) of c/a causes an increase (decrease)

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The Influence of Uniaxial Elastic Deformations on the Magnetic Properties of Zink Crystals at Low Temperatures SOV/56-35-1 47/59

of the numbers of the charges in the anomalous group. There are 2 figures, 1 table, and 2 references which are Soviet.

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk Ukrainskoy SSR (Physico-Technical Institute of the AS Ukrainskaya SSR)

SUBMITTED: April 4, 1958

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24 (2), 24 (3)

AUTHORS: Dmitrenko, I. M., Verkin, B. I., Lazarev, B. G.

SOV/56-35-2-4/60

TITLE: The Magnetic Properties of Metals at Low Temperatures IV (Magnitnyye svoystva metallov pri nizkikh temperaturakh IV). The Influence of Pressure Brought to Bear From All Sides Upon the de Haas-van Alphen Effect in Zinc Crystals (Vliyaniye vsestoronnego szhatiya na effekt de Gaaza-van Al'fena u kristallov tsinka)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol 35, Nr 2, pp 328-339 (USSR)

ABSTRACT: The present paper aims at contributing towards facilitating research work concerning the anisotropy of the magnetic properties of crystals at low temperatures. Homogeneous compression of samples (from all sides) was brought about by applying the method developed by Lazarev et al. (Ref 10), i. e. by allowing water to freeze in a bomb. The bomb consisted of pure beryllium bronze (made by I. Bolgov). Experimental conditions: Pressure p 1700 kg/cm^2
Magnetic field H 20 000 Oe

The Magnetic Properties of Metals at Low Temperatures IV. The Influence of Pressure Brought to Bear From All Sides Upon the de Haas-van Alphon Effect in Zinc Crystals

SOV/56-35-2-4/60

Temperature Interval 1,6 - 4,2°K

The samples investigated consisted of spectrally pure zinc supplied by the firm of Khil'ger, which was subjected to different kinds of treatment:

Zn-1: prepared according to reference 12, 7 times recrystallized Khil'ger-zinc.

Zn-2, Zn-3, Zn-4: (round) prepared in quartz shell according to Obreimov-Shubnikov; velocity of growth: 10, 15, 50 mm/hour.

Zn-7 (hexagonal) prepared by the method developed by Kapitsa, growth: 5 mm/hour.

First the de-Haas-van Alphen-effect in the free zinc crystals is dealt with. The results obtained are shown by diagrams (Figs 2 - 6) (Angle-dependence of oscillation periods of magnetic susceptibility for the numerically smallest group of mobile charges for two different orientations of the crystal; de Haas-van Alphen-fine-structure effect for 3 different orientations; dependence of the oscillation moment L_z/H^2 on orientation and temperature). The following

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The Magnetic Properties of Metals at Low Temperatures IV. The Influence of Pressure Brought to Bear From All Sides Upon the de Haas-van Alphen Effect in Zinc Crystals

SOV/56-35-2-4/60

investigations were carried out under pressure: The dependence of the period and of the amplitude of the oscillations for the smallest group of mobile charges in the case of different orientation of the crystal. For all θ - values (angle between H and the main axis of the crystal) the periods of these oscillations increase by 40 - 48 %. Homogeneous compression (from all sides) further causes a considerable decrease of the oscillation amplitude as well as a modification of its temperature-dependence. Experimental results are compared with the phenomenological theory of the effects of oscillations in metals. The author thanks A. M. Kosevich for discussing results. There are 7 figures, 3 tables, and 22 references, 15 of which are Soviet.

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk Ukrainskoy SSR (Physico-Technical Institute, AS Ukrainskaya SSR)

Card 3/4

I. M. Dmitrenko

24(0)
AUTHOR: Chentsov, R. SOV/53-67-4-7/7

TITLE: The Fifth All-Union Conference on the Physics of Low Temperatures (5-ye Vsesoyuznoye soveshchaniye po fizike nizkikh temperatur)

PERIODICAL: Uspekhi fizicheskikh nauk, 1959, Vol 67, Nr 4, pp 743-750 (USSR)

ABSTRACT: This Conference took place from October 27 to November 1 at Tbilisi; it was organized by the Otdeleniye fiziko-matematicheskikh nauk Akademii nauk SSSR (Department of Physico-mathematical Sciences of the Academy of Sciences, USSR), the Akademiya nauk Gruzinskoy SSR (Academy of Sciences, Grusinskaya SSR), and the Tbilisskiy gosudarstvennyy universitet im. Stalina (Tbilisi State University imeni Stalin). The Conference was attended by about 300 specialists from Tbilisi, Moscow, Khar'kov, Kiyev, Leningrad, Sverdlovsk, and other cities as well as by a number of young Chinese scientists at present working in the USSR. About 50 lectures were delivered which were divided according to research fields.

III. Galvanomagnetic Phenomena. (10 lectures). I. M. Lifshits and V. D. Peschanskiy (KhPTI, Khar'kov Physico-technical Institute, Khar'kov University) showed that the most important part in connection with the galvanomagnetic properties of metals is played by the concrete form of the Fermi surface of conductivity electrons. N. Ye. Alekseyevskiy (IPP) spoke about experiments he carried out together with Yu. P. Gaydukov. He investigated the variation of the resistance in the transversal magnetic field at helium temperatures of Au, Cu, Pb, Ta, Ga, Ti and (together with T. I. Kostina) of Bi. Ye. S. Borovik and V. G. Volotskaya (KhPTI) investigated the galvanomagnetic properties at low temperatures of chromium and zirconium and found that the resistance of chromium grows with field strength without attaining a saturation value. L. S. Kan and B. G. Lazarev (KhPTI)

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investigated the resistance minimum in gold at low temperatures and found that if the sample is heated, the minimum disappears. Yu. P. Gaydukov (IPP) said in this connection in the course of the discussion that the minimum effect does not occur in gold in the case of very pure samples; the disappearance of the minimum is explained by the plastic deformation of the sample at helium temperatures. M. Ya. Azbel' (KhPTI) gave a report of his work in connection with the quantum theory of the high-frequency resistance of metal in a constant magnetic field at low temperatures. M. I. Kaganov and V. M. Tsukernik (KhPTI) spoke about a theoretical investigation of the influence exercised by thermoelectric forces upon the skin effect in various conductors. B. I. Verkin and B. N. Aleksandrov (KhPTI) spoke about measurements of the electric resistance of thin wires made from highly-pure tin, indium and cadmium, and computed the free length of path at 4.2°K in these metals as amounting to 1/3 to 2/3 mm. N. B. Brandt (MGU) and B. I. Verkin and I. M. Dmitrenko (KhPTI) investigated the influence exercised by the hydrostatic pressure (of 1000 atmospheres absolute pressure) upon

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the behavior of metals at low temperatures and investigated the quantum oscillations of the magnetic susceptibility of bismuth at 1.6 - 4.2°K. G. Ye. Zil'berman and A. M. Kosevich (KhPTI) gave a theoretical explanation of the fact that already relatively small deformations exercise considerable influence upon oscillation effects in metals. IV. Magnetism. A. S. Borovik-Romanov (IPP) delivered a report on investigations he carried out of the anisotropy of the weak ferromagnetism in monocrystal samples of the antiferromagnetic $MnCO_3$ (the effect of anisotropy was predicted by the thermodynamical theory developed by Dzyaloshinskiy). In the course of the discussion R. A. Alikhanov (IPP) spoke about neutronographical investigations he carried out of the magnetic structure of $MnCO_3$ and $FeCO_3$ at low temperatures. P. L. Kapitsa stressed the importance of the method based upon Dzyaloshinskiy's theory. V. M. [illegible] (VNIIFTRI), whose lecture was read by A. S. Borovik-Romanov, reported on measurements carried out by him (in the IPP) of the magnetic anisotropy of the antiferromagnetic $CuSO_4$- and $CoSO_4$-monocrystals.

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Ye. A. Turov (IFM AN SSSR, Sverdlovsk) spoke about his theore-

24(2),24(3)
AUTHORS: Verkin, B. I., Dmitrenko, I. M. SOV/20-124-3-17/67

TITLE: The Dependence of the Main Characteristics of the Effect of de Haas-van Alphen in Crystals of Zinc on Pressure (Zavisimost' osnovnykh kharakteristik effekta de Khaaza-van Al'fena u kristallov tsinka ot davleniya)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 3, pp 557-558 (USSR)

ABSTRACT: The present paper discusses the experimental investigation of the magnetic properties of zinc crystals at low temperatures in a constant field and at various pressure values. The method of investigating the anisotropy of the magnetic properties of zinc crystals consisted as before in measuring the pair of forces acting upon this crystal. In this case the crystal was mounted in a high-pressure bomb which was magnetically isotropic and which was suspended on a thin thread within a homogeneous magnetic field. The magnetic properties of the zinc crystals were investigated at the temperatures of 4.2, 14 and 20° K in the pressure interval $0 \leq p \leq 1{,}750$ kg/cm^2 and at field strengths $H \leq 20{,}000$ oersted. The maximum pressure

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in the bomb was attained by means of frozen water at a constant volume; for lower pressures aqueous solutions of ethyl alcohol were used. The results obtained by the investigations are shown in form of a diagram. The dependence of the period of the oscillations of susceptibility of pressure has a very complicated periodic character, and the course taken by the curves and also the relative pressure dependence of the period in the case of the two values of θ are practically equal. Here θ denotes the angles between the crystallographical axis of the zinc crystals in the bomb and the field vector. As expected, the anisotropy of the magnetic properties of zinc-crystals oscillates with pressure at $H = \text{const}$, but this effect is rendered very complicated by the periodic dependence of the period on pressure. However, not only the period, but also the amplitude of oscillations depends non-monotonously on pressure. These and other data given here lead to the discovery of two new characteristic features of the de Haas-van Alphen effect: 1) The period of the oscillations of zinc susceptibility depends periodically on pressure. 2) Whereas the period in the case of free zinc crystals at $T \leq 20.4^{\circ}$ K

does not depend on temperature, the period of the oscillations of susceptibility of a crystal subjected to a pressure of 1,000 kg/cm^2 increases considerably with rising temperature (within the same temperature interval). These two particular features cannot be explained by the present theory on the de Haas-van Alfvén effect. The experimental data determined by the present paper may perhaps be explained by the attenuation of the inequations $kT \ll E_0$ and $\mu H \ll E_0$ as a result of the reduction of E_0 (the significance of this quantity is not defined), and also by consideration of the periodic dependence of the chemical potential of the electrons on pressure. The authors thank A. M. Kosevich for discussing the results of this paper. There are 1 figure and 9 Soviet references.

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk USSR (Physico-technical Institute of the Academy of Sciences, Ukrainskaya SSR)

9.4300 (1137, 1147, 1158)
24.2200 1138, 1164, 1160, 1055

S/056/61/040/002/042/047
B102/B201

AUTHORS: Verkin, B. I., Dmitrenko, I. M., Svechkarev, I. V.

TITLE: Magnetic properties of beryllium at temperatures from 300 to 4.2°K

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 40, no. 2, 1961, 670-671

TEXT: Studies of the magnetic properties of pure elements displaying a long-period de Haas - Van Alphen effect have involved examinations of pure beryllium single crystals, which are briefly discussed in the paper. Measurements were made by the Faraday method in the vertical gradient of fields up to 10 koe; photoelectric self-compensation was applied in the process (cf. B. V. Deryagin, DAN SSSR, 61, 275, 1948, or Hedgcock, Phys. Rev. 104, 1564, 1956). Absolute measurements were accurate within ~2%, relative measurements within ~0.5%. The angular dependence of the magnetic susceptibility in the temperature range between 300 and 4.2°K was measured on two beryllium single crystal specimens (Be-1 and Be-2, ~99.99% pure), and two indium specimens (In-1 and In-2).

Magnetic properties of beryllium ...

The result is presented in Fig. 1. Prior to the appearance of the de Haas - Van Alphen effect, the angular dependence of χ in Be can be described by the law $\chi(\theta) = \chi_{\parallel}\cos^2\theta + \chi_{\perp}\sin^2\theta$ (solid curves in Fig. 1). The main values of susceptibility ($\chi_{\parallel} = 2.38 \cdot 10^{-6}$; $\chi_{\perp} = 0.80 \cdot 10^{-6}$ cm^3/g) and their temperature dependence are in good agreement for both Be specimens. The character of the growth of $|\chi_{\perp}|$ with temperature can be explained by the contribution made by the paramagnetism of a small group of electrons (or holes). In analogy to most of the elements studied previously, anisotropy decreases with growing temperature, and the temperature-dependent component of susceptibility has an asymptotic approach to the temperature-independent (or poorly dependent) component. $\chi_{\perp}$ in beryllium displays not only a temperature dependence, but, already at ~20°K, a periodic field dependence as well, which is indicative of the fact that, as applies also to other elements, the phenomena are associated with the existence of small groups of mobile charges. For indium specimens $\chi(\theta)$ also follows the cosine law (Fig. 1). Although both specimens were made of the same initial material,

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B102/B201

Magnetic properties of beryllium ...

deviations appeared in the absolute values of χ. This is probably due to the existence of small amounts of impurities having an appreciable effect in In as well as in Bi and Sb. The strong anisotropy of this metal is said to be probably caused entirely by a small group of carriers, which does not manifest itself in electric or galvanomagnetic properties. Professor B. F. Lazarev is thanked for having permitted work to be conducted at the low-temperature laboratory of the FTI AN USSR (Institute of Physics and Technology, AS UkrSSR), and A. A. Kruglykh for having supplied the Be single crystals. [Abstracter's note: The word laboratoriya (laboratory) seems to be omitted in the "Association".] There are 2 figures and 5 references: 2 Soviet-bloc and 3 non-Soviet-bloc.

ASSOCIATION: Fiziko-tekhnicheskiy institut nizkikh temperatur Akademii nauk Ukrainskoy SSR (Institute of Physics and Technology for Low Temperatures, Academy of Sciences, Ukrainskaya SSR)

SUBMITTED: September 14, 1960

Card 3/3

L 7020-65 EWT(1)/K/EEC(b)-2 IJP(c)/BSD/AFWL/AFETR/AEDC(a)/AS(mp)-2/ASD(a)-5/SSD/ESD(t)/RAEM(t) GG

ACCESSION NR: AP4045285 B/0057/64/034/009/1709/1711

AUTHOR: Verkin, B. I.; Dmitrenko, I. M.; Dmitriyev, V. M.; Churilov, G. Ye.; Mende, F. F.

TITLE: Three-centimeter superconducting resonant cavity

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 34, no. 9, 1964, 1709-1711

TOPIC TAGS: resonant cavity, superconducting cavity, superconductivity, superconducting lead, lead, lead resonant cavity, microwave cavity, high Q cavity, particle accelerator

ABSTRACT: A superconducting resonant cavity operating in the E_{012} mode has been investigated as a high-Q element applicable to the process of interaction between charged particles and the electromagnetic field. The cylindrical cavity, 35 mm high and 45 mm in diameter, was fabricated by simple machining of technical grade C-0 brand lead. No special surface finishing was necessary. The coupling to the measuring circuit was designed to ensure the best approximation of the readings to the true internal Q-factor of the cavity. The latter, obtained by measuring the attenuation decrement, reached $5 \cdot 10^6$ at 4.2 K.

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L 7020-65
ACCESSION NR: AP4045285

The authors anticipate the use of these simple devices as microwave frequency stabilizers, for precise measurements of ε and μ at helium temperatures, in resonance wavemeters, filters, frequency standards, etc., and in the construction of small and economical continuous-wave accelerators. Orig. art. has: 2 formulas and 1 figure.

ASSOCIATION: Fiziko-tekhnicheskiy institut nizkikh temperatur AN UkrSSR Khar'kov (Physicotechnical Institute of Low Temperatures, AN UkrSSR)

SUBMITTED: 13Feb64 ATD PRESS: 3108 ENCL: 00

SUB CODE: EC, EM NO REF SOV: 004 OTHER: 002

Card 2/2

L 23084-65 EWT(1)/EEC(f)/EWA(d)/EEC(b)-2 IJP(c) GG

ACCESSION NR: AP5001832 S/0056/64/047/006/2091/2094

AUTHORS: Yanson, I. K.; Svistunov, V. M.; Dmitrenko, I. M.

TITLE: Experimental observation of the tunneling of Cooper pairs between thin layers of superconducting tin

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47, no. 6, 1964, 2091-2094

TOPIC TAGS: superconductivity, Cooper pair, tin, tunneling effect, thin film, tunneling current, Josephson current

ABSTRACT: The superconducting tunneling current (STC) predicted theoretically by B. D. Josephson (Phys. Lett. v. 1, 251, 1962) was observed to flow between two tin films about 2000 Å thick separated by an oxide layer of about 10 Å. This current flowed at zero voltage and stopped when its magnitude reached a certain value that depended on the magnetic field, temperature, and geometry of the junc-

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tion. Observation of the effect was made possible by the attainability of very thin and very homogeneous oxide layers, making a tunnel junction with a resistivity of 0.00[illegible] ohm-mm^2 at 4.2K feasible. The measurements were made in the temperature range 1.5—4.2K. The amplitude of the STC exhibited a periodic dependence on the magnetic field, with current minima occurring whenever the field becomes a multiple of 0.4 Oe, with maxima that decrease monotonically with increasing field, and with a period corresponding to the value of the quantum of magnetic flux in the superconductors. The temperature dependence of the STC and the singularities of the current-voltage curves of the tunnel structure are due to the tunneling of the superconducting electron pairs and to multiparticle tunneling. The dependence of the superconducting tunneling current on the temperature and on the magnetic field was investigated. Some of the anomalies in the results remain unclear. "The authors thank Yu. F. Komnik for valuable suggestions during the preparation of the film structures." Orig. art. has: 4 figures. [02]

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000410510013-6"

L 23084-65
ACCESSION NR: AP5001832

ASSOCIATION: Fiziko-tekhnicheskiy institut nizkikh temperatur Akademii nauk Ukrainskoy SSR (Physicotechnical Institute of Low Temperatures, Academy of Sciences, UkrSSR)

SUBMITTED: 24Jul64	ENCL: 00	SUB CODE: SS
NO REF SOV: 001	OTHER: 011	ATD PRESS: 3173

Card 3/3

EWT(1)/EWA(h)

ACC NR: AP5027047 SOURCE CODE: UR/0120/65/000/005/0249/0250

AUTHOR: Dmitrenko, I. M.; Logvinenko, S. P.; Ivanov, N. I.; Kolot, Z. M.

ORIG: Physics-Engineering Institute of Low Temperatures, AN UkrSSR, Khar'kov (Fiziko-tekhnicheskiy institut nizkikh temperatur AN UkrSSR)

TITLE: Thermometric characteristics of semiconductor diodes

SOURCE: Pribory i tekhnika eksperimenta, no. 5, 1965, 249-250

TOPIC TAGS: semiconductor diode, temperature characteristic, germanium diode, gallium arsenide

ABSTRACT: The present note reports on semiconductor diode investigations of fused gallium arsenide and point germanium (D14A and D9A) diodes in a 2 to 300K temperature range. Graphs show the temperature and transfer characteristics of experimental low-ohmic, high ohmic, and commercially available diodes. Results agree with those found in the literature. During repeated cooling of nonhermetically sealed diodes, the reproducibility of readings is within 0.05 — 0.1°. Authors acknowledge the help of V. M. Svetlichnyy and L. A. Zubritskiy in the initial stages of the work. Orig. art. has: 3 figures.

SUB CODE: EC, GP / SUBM DATE: 25Jul64 / ORIG REF: 002/ OTH REF: 002

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Card 1/1 UDC: 621.382.2:536.53

L 4885-66 EWT(l)/EWT(m)/EWP(w)/EWP(i)/T/EWP(t)/EWP(b) I:P(c) JD/GG
ACCESSION NR: AP5021142 UR/0386/65/002/001/0017/0021

AUTHOR: Dmitrenko, I. M.; Yanson, I. K.; Svistunov, V. M.

TITLE: Interaction of the alternating Josephson current with resonant modes in a superconducting tunnel structure

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 2, no. 1, 1965, 17-21

TOPIC TAGS: superconductivity, tunnel diode, volt ampere characteristic, tin

ABSTRACT: This is a continuation of earlier work by the authors (ZhETF v. 47, 2091, 1964 and v. 48, 976, 1965), where it was shown that the voltage-current characteristics of superconducting-film tunnel structures, which clearly display the Josephson effect, also exhibit small steps characterized by the fact that the change of the current through the tunnel junction occurs at almost constant voltage on the junction, and is accompanied by emission of photons of frequency corresponding to the frequency of the alternating Josephson supercurrent. In the present article the authors propose a simple model, in which the steps result from excitation of resonant electromagnetic oscillations in a tunnel structure when alternating Josephson current flows between the films, and present experimental data confirming this model. The calculations are carried out for the propagation of electromag-

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netic waves in a layer of oxide between superconducting tin films. The condition for the resonance of the electromagnetic waves in the region forming the tunnel junction between the films is determined. The experiments were carried out on tunnel structures of the type Sn-I-Sn (I = insulator 10--20 Å thick), similar to those described in the earlier work, as well as more complicated ones, such as in Fig. 1 of the Enclosure. The observed maximum values of the direct Josephson current were 0.8--0.95 of the theoretically predicted value. The experimental results show that for each tunnel structure there is a discrete set of voltages $V_p^{(n)}$, at which steps appear when a constant magnetic field on the order of 1 Oe is applied parallel to the film. They also indicate that a strong interaction between the alternating Josephson current and the resonant mode of the strip resonator formed by the tunnel junction occurs in the tunnel structure. This is the mechanism that causes the effective coupling between the alternating Josephson current and the electromagnetic field, and this in turn has made it possible to observe directly the photon emission earlier. "The authors thank V. I. Verkin for continuous interest in the work, and I. O. Kulik and Yu. F. Komnik for useful discussions." Orig. art. has: 3 figures and 3 formulas.

ASSOCIATION: Fiziko-tekhnicheskiy institut nizkikh temperatur Akademii nauk Ukrainskoy SSR (Physicotechnical Institute of Low Temperatures, Academy of Sciences, Ukrainian SSR)

L 4885-66

ACCESSION NR: AP5021142

SUBMITTED: 18May65 ENCL: 01 SUB CODE: SS, EM

NR REF SOV: 002 OTHER: 007

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L 4885-66
ACCESSION NR: AP5021142

ENCLOSURE: 01

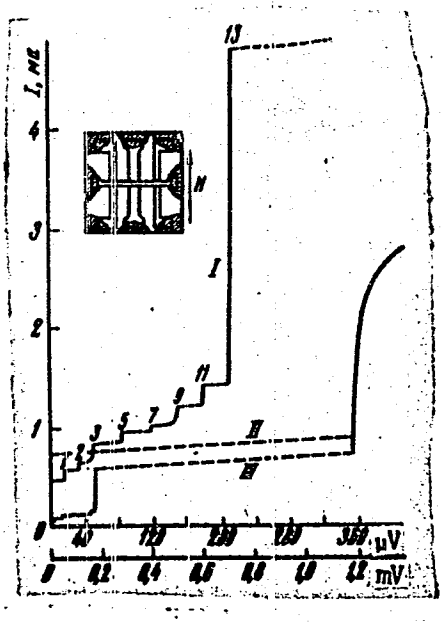

Fig. 1. Voltage-current characteristics of Sn-I-Sn tunnel junction: 1 - initial section (H = 1.12 Oe); 1, 2, 3, ... - numbers of steps; II - total volt-ampere characteristic (H = 0); III - the same (H = 1 Oe). The current scale for II and III should be increased by a factor of 10.

FC

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L 5258-66 EWT(1) IJP(c) GD

ACC NR: AP5026104 SOURCE CODE: UR/0386/65/002/005/0242/0246

AUTHOR: Dmitrenko, I. M.; Yanson, I. K.

ORG: Physicotechnical Institute of Low Temperatures, Academy of Sciences, UkrSSR (Fiziko-tekhnicheskiy institut nizkikh temperatur Akademii nauk Ukrainskoy SSR)

TITLE: Certain singularities of electromagnetic radiation generated by a superconducting tunnel structure

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 2, no. 5, 1965, 242-246

TOPIC TAGS: superconductivity, tunnel effect, volt ampere characteristic

ABSTRACT: This is a continuation of earlier work by the authors on superconducting Sn-I-Sn tunnel structures (Pis'ma ZhETF v. 2, 17, 1965) and on the electromagnetic radiation generated by a tunnel structure (ZhETF v. 48, 976, 1965). The present paper contains preliminary results of an experimental investigation of the spectral composition of the Josephson high-frequency radiation. The investigated tunnel had a very uniform layer of oxide between metal films, so that the power radiated by the structure was more than 10 times the power observed earlier, reaching several times 10^{-13} W. This was several hundred times more the noise level of the receiver, which had a bandwidth of 8 Mc. No attempts were made in the investigations to

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match the tunnel structure to the waveguide, owing to the technical difficulty of this task. In addition, the nonresonant system used to couple the tunnel junction to the waveguide apparently had the advantage that its frequency dependence in the investigated frequency band (8900—9800 Mc) was very small. The measurements were made at 2.85K and 0.297 Oe. The voltage-current characteristic of the tunnel structure turned out to be such that the radiation frequency could be regulated within the limits of the bandwidth of the strip cavity of the structure by varying the current through the junction and consequently the voltage across the junction. It was also possible to turn the radiation on or off at will by turning on or off the current flowing through the solenoid that produced the small constant magnetic field. Plots were obtained of the volt-ampere characteristic, of the frequency dependence of the radiation power, obtained by tuning the receiver at different fixed values of the junction current, and of the dependence of the radiation power on the frequency for a fixed junction current and different magnetic fields. It is concluded on the basis of the experimental data that the Josephson radiation is not a noise effect, having a rather narrow spectral composition, and that the bandwidth of the radiated frequencies can amount to $\lesssim 10^{-3}$ of the central frequency. The radiated frequency band is much narrower than the bandwidth of the tunnel-structure strip resonator and depends on the junction current (and thus on the

L 5258-66

ACC NR: AF5026104

potential difference across the junction) and on the constant magnetic field. The dependence of the spectral composition of the radiation on the constant magnetic field confirms the mechanism proposed earlier for the interaction between the tunnel-current density wave and the electromagnetic wave. The authors are deeply grateful to V. M. Svistunov for help with this work. Orig. art. has: 3 figures. [02]

SUB CODE: EM,EC,SS/ SUBM DATE: 19Jul65/ ORIG REF: 003/ OTH REF: 001/

ATD PRESS: 4138

Card 3/3

L 47360-65 EWT(l)/EWT(m)/EWP(b)/EWP(t) IJP(c) GG/JD

ACCESSION NR: AP5008760 S/0056/65/048/003/0976/0979

34
31
B

AUTHOR: Yanson, I. K.; Svistunov, V. M.; Dmitrenko, I. M.

TITLE: Experimental observation of the tunnel effect for Cooper pairs with photon emission

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 3, 1965, 976-979

21

TOPIC TAGS: superconductivity, tunnel effect, Cooper pair, photon emission, tin, tin oxide

ABSTRACT: The article describes an experiment aimed at observing photon emission upon occurrence of alternating superconduction current in a structure of the type Sn—SnO_2—Sn. Tin films of width 1.17 mm and thickness ~2000 Å were evaporated on a glass substrate at a right angle, and a thin oxide layer was formed between the films. The structure was placed in a rectangular waveguide parallel to its side wall, one of the films being parallel to the wave propagation vector in the guide. A small constant magnetic field was applied in the same direction. The entire system was placed in a liquid-helium cryostat, and the volt-ampere characteristic of the structure was plotted on an automatic potentiometer at 1.57K for various

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L 47360-65
ACCESSION NR: AP5008760

values of the magnetic field. The step observed in the response of a tuned detector, and field 1.5 Oe at a bias of 19.8 μV corresponding to a wavelength of the order of 3 cm, together with other steps observed at nearly the same voltage for various magnetic fields, is interpreted as direct experimental proof of the possibility of Cooper pairs tunneling between two superconductors with emission of photons. An inverse experiment, where the tunnel structure was irradiated by an external microwave generator, was also performed and yielded similar evidence. "The authors thank B. I. Boroday for help in preparing the tunnel structure and Yu. F. Komnik for a useful discussion." Orig. art. has: 2 figures and 1 formula.

ASSOCIATION: Fiziko-tekhnicheskiy institut nizkikh temperatur AN UkrSSR (Physicotechnical Institute of Low Temperatures AN UkrSSR)

SUBMITTED: 09Dec64 ENCL: 00 SUB CODE: GP, NP

NR REF SOV: 001 OTHER: 003

Card 2/2 CC

L 23165-66 EWT(d)/EEC(k)-2

ACC NR: AP6002713 SOURCE CODE: UR/0056/65/049/006/1741/1753

AUTHOR: Dmitrenko, I. M.; Yanson, I. K.

ORG: Physicotechnical Institute of Low Temperatures, Academy of Sciences, UkrSSR (Fiziko-tekhnicheskiy institut nizkikh temperatur Akademii nauk UkrSSR)

TITLE: Investigation of the high-frequency Josephson current

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 49, no. 6, 1965, 1741-1753

TOPIC TAGS: volt ampere characteristic, tunnel diode, critical point, superconductivity, tunnel effect, constant magnetic field, electronic test equipment

ABSTRACT: This is a continuation of earlier work by the authors dealing with the Josephson current and the composition of its radiation (ZhETF Pis'ma v. 2, No. 5, 1965 and earlier papers) and is devoted to an experimental investigation of the dependence of the step-like structure of the volt-ampere characteristics of Sn-I-Sn tunnel junctions on the dimensions of the junction, the temperature, and the constant magnetic field. The measurements were made on thin films of various widths and 1000--2000 Å thickness deposited in vacuum on glass substrates, at temperatures below the critical point of tin (~3.8K). The film thickness was measured accurate to 10--20%. The Josephson tunnel effect was observed in low-resistance tunnel

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L 23165-66

ACC NR: AP6002713

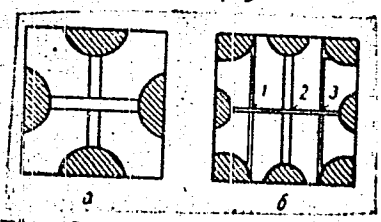

Fig. 1. Sn-I-Sn tunnel structure. Shaded areas - indium contacts.

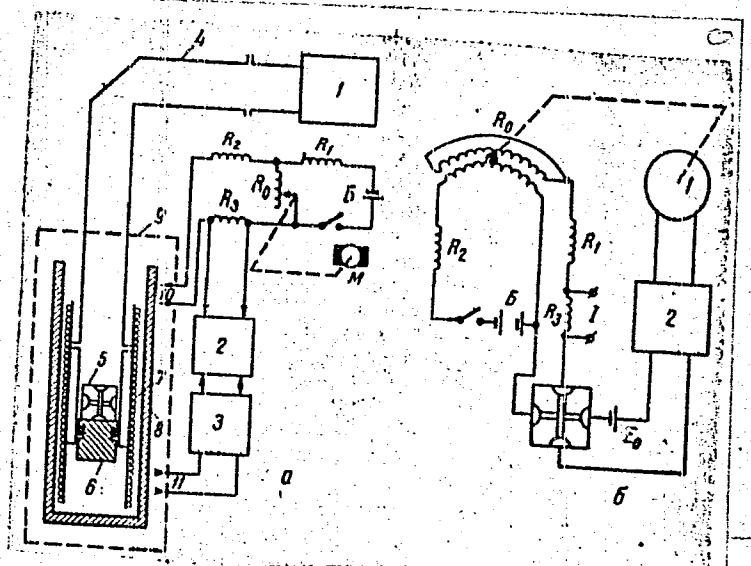

Fig. 2. a) Diagram of apparatus used to record the volt-ampere characteristics and the interaction of the s structure with the field. 1 - Radiation receiver, 2 - plotter, 3 - amplifier, 4 - waveguide, 5 - tunnel structure, 6 - plunger, 7 - solenoid, 8 - shield, 9 - liquid-helium bath, 10, 11 - leads. b) Automatic recorder of critical current as function of the magnetic field. 1 - Motor, 2 - amplifier

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ACC NR: AP6002713

3

structures having resistivity ~10^{-2} ohm-mm in the normal state. The construction of the tunnel junction (Fig. 1) and the test apparatus (Fig. 2) are described. The results show that the steps in the volt-ampere characteristics are due to excitation of resonant electromagnetic oscillations by the Josephson current density wave. The positions of the steps on the voltage axis and the dependence of the amplitudes of the steps on the constant magnetic field agree well with the existing theory developed by the authors (ZhETF Pis'ma v. 2, No. 1, 17, 1965). The experiments confirm the existence of the alternating Josephson current. Cases when the width of the junction were larger or smaller than the double depth of penetration of the magnetic field in the junction were also investigated. A different dependence on the magnetic field was observed for the two classes, and this difference cannot be entirely explained by the present theory. Authors thank I. O. Kulik and Yu. P. Komaik for discussing the results of the investigation, and V. M. Svistunov for help with the experiment. Orig. art. has: 9 figures and 9 formulas.

SUB CODE: 20/ SUBM DATE: 16Jul65/ ORIG REF: 005/ OTH REF: 013

Card 3/3 UCR

L 38201-66 EWT(1) IJP(c) CC

ACC NR: AP6022041 SOURCE CODE: UR.0120/66/000/003/0223/0224

65
B

AUTHOR: Vtorov, Ye. P.; Dmitrenko, I. M.

ORG: Physico-Technical Institute of Low Temperature, AN UkrSSR, Khar'kov (Fiziko-tekhnicheskiy institut nizkikh temperatur AN UkrSSR)

TITLE: Superconducting bolometric 15B current modulator

SOURCE: Pribory i tekhnika eksperimenta, no. 3, 1966, 223-224

TOPIC TAGS: dc amplifier, bolometer, bolometric modulator, superconductivity

ABSTRACT: An amplifier is described which is intended for measuring extremely small (10^{-11} v) voltages produced by low-resistance (0.1 ohm) sources; the instrument uses a film modulator whose superconductivity is destroyed, at a preset frequency, by means of periodic illumination. The instrument uses standard electronic components and is claimed to be simpler than previously known d-c amplifiers (e.g., I. M. Templeton, J. Scient. Instr., 1955, v. 32, 314). A block diagram of the amplifier and a sketch of the low-temperature part of the device are shown. The new instrument was used for measuring variation in resistance with temperature (range, 2—3.5K) of a large-crystal specimen of very pure cadmium ($R_0/R_{293} = 1.1 \times 10^{-5}$). "The authors wish to thank I. Kh. Albegova and T.P. Boyko for their assistance in the work". Orig.art.has: 4 figures. [03]

SUB CODE: 09 / SUBM DATE: 20May65 / ORIG REF: 002 / OTH REF: 002 / ATD PRESS: 5044

Card 1/1 MLP UDC: 621.317.745.4

27748
S/058/61/000/007/032/086
A001/A101

[redacted] Dmitrenko, I.Ye., Savel'yev, G.A.

TITLE: The flat vacuum-free electroluminescence screen

PERIODICAL: Referativnyy zhurnal. Fizika, no. 7, 1961, 155, abstract 7V427 ("Izv. Leningr. elektrotekhn. in-ta", 1960, no. 43, 100 - 107)

TEXT: The authors describe the method of manufacturing an electroluminescent screen made in the form of a matrix composed of two mutually perpendicular systems of conducting strips, with a luminescent layer placed between them. The CdS activated with impurities is used as luminophor. The functioning of the screen is based on excitation of electroluminescence in the CdS layer arising during recombination of the main charge carriers on impurities. The analysis is given of luminescence conditions of a screen elementary cell being at the point of intersection of conducting strips.

V. Gor'kov

[Abstracter's note: Complete translation]

Card 1/1

BRYLEYEV, Arkadiy Mikhaylovich, doktor tekhn. nauk, prof.; PENKIN, Nikolay Fedorovich, kand. tekhn. nauk; PUGIN, Daniil Kalistratovich, kand. tekhn. nauk; SHARIKOV, Vladimir Alekseyevich, inzh. Prinimal uchastiye DMITRENKO, I.Ye., inzh.; SHIROKSHIN, K.A., inzh., retsenzent; MARENKOVA, G.I., inzh., red.; NOVIKAS, M.N., inzh., red. USENKO, L.A., tekhn. red.

[Transistorized and magnetic noncontact devices of centralized traffic control systems] Poluprovodnikovye i magnitnye beskontaktnye pribory v ustroistvakh STsB. [By] A.M.Bryleev i dr. Moskva, Transzheldorizdat, 1962. 230 p. (MIRA 15:5)
(Railroads--Electronic equipment)
(Railroads--Signaling--Centralized traffic control)

BRYLEYEV, A.M., doktor tekhn. nauk, prof.; PUGIN, D.K., kand. tekhn. nauk; DMITRENKO, I.Ye., inzh.

Station apparatus of a system for automatic space interval control of train traffic using radio channels. Trudy MIIT no.170:5-18 '63.

Tracking device of a system for automatic space interval control of train traffic using radio channels. Ibid.:57-70 (MIRA 17:6)

DMITRENKO, I.Ye., inzh.

Computing system for determining the distance between trains. Trudy MIIT no.170:33-56 '63. (MIRA 17:6)

BRYLEYEV, A.M., prof., doktor tekhn.nauk; DMITRENKO, I.Ye., inzh.; PUGIN, D.K., kand.tekhn.nauk

Automatic train traffic control system with the use of radio channels. Zhel.dor.transp. 45 no.7:37-40 Jl '63. (MIRA 16:9)
(Railroads—Automatic train control)
(Railroads—Electronic equipment)

L 27695-66 EWA(h)/EWT(1) TG/JXT(CZ)

ACC NR: AT6013828 (A) SOURCE CODE: UR/2649/65/000/209/0147/0153

24
B+1

AUTHOR: Dmitrenko, I. Ye. (Candidate of technical sciences)

ORG: none

TITLE: Some problems in evaluating the reliability of newly designed systems

SOURCE: Moscow. Institut inzhenerov zheleznodorozhnogo transporta. Trudy, no. 209, 1965. Elementy novykh sistem avtomatiki na zheleznodorozhnom transporte (Elements of new systems of automation in railroad transportation), 147-153

TOPIC TAGS: railway equipment, reliability engineering, transportation system

ABSTRACT: In the design of new automated railroad transportation systems there is a need for performance reliability evaluations which are tailored to the specific operational circumstances. Borrowing examples from the theory of radio communications, the author surveys briefly the basic theory, discusses the reliability of various logic elements, and explains the sequence of steps by which one can estimate the reliability of systems under development. The article concludes with general recommendations concerning the desirable features of new systems, which contribute to reliable operation. Orig. art. has: 20 formulas, 3 figures, and 2 tables.

SUB CODE: 14, 13 /SUBM DATE: none / ORIG REF: 001 /

Card 1/1

DMITRENKO, L.M.; LACHINOV, S.S.; SIVYAKOVA, R.F.

Effect of the cathodic and anodic polarization of an ammonia synthesis catalyst on its activity. Kin. i kat. 1 no. 3:379-384 S-O '60. (MIRA 13:11)

1. Nauchno-issledovatel'skiy institut azotnoy promyshlennosti.
(Polarization (Electricity)) (Ammonia)
(Catalysts)

DMITRENKO, L.M.; KUZNETSOV, L.D.; KANYSHINA, Ye.A.; KONTOROVICH, G.I.

Selection of raw materials for the production of catalysts for ammonia synthesis. Khim. prom. no.10:750-752 O '63.
(MIRA 17:6)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut azotnoy promyshlennosti i produktov organicheskogo sinteza i TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii imeni I.P. Bardina.

DMITRENKO, L.M.; LACHINOV, S.S.; SIVYAKOVA, R.F.

Effect of cathodic and anodic polarization of a catalyst for ammonia synthesis on its activity. Part 2. Kin. i kat. 6 no.1: 121-127 Ja-F '65. (MIRA 18:6)

1. Gosudarstvennyy institut azotnoy promyshlennosti.

ANTONOVA, L.G.; KRASIL'SHCHIKOV, A.I.; SIVYAKOVA, R.F.; DMITRENKO, L.M.

Ammonia yield on a K-55 caralyst as a function of the potential. Kin. i kat. 6 no. 6:1117-1118 N-D '65 (MIRA 19:1)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut azotnoy promyshlennosti i produktov organicheskogo sinteza. Submitted February 3, 1965.

L 24500-66 EWT(m)/EWP(j)/T WW/JW/JWD/RM

ACC NR: AP6002167 SOURCE CODE: UR/0195/65/006/006/1117/1118

AUTHOR: Antonova, L. G.; Krasil'shchikov, A. I.; Sivyakova, R. F.; Dmitrenko, L. M.

ORG: State Scientific Research and Planning Institute of the Nitrogen Industry and Products of Organic Synthesis (Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut azotnoy promyshlennosti i produktov organicheskogo sinteza)

TITLE: Potential dependence of ammonia yield on K-55 catalyst

SOURCE: Kinetika i kataliz, v. 6, no. 6, 1965, 117-118

TOPIC TAGS: nitrogen, hydrogen, ammonia, cathode polarization

ABSTRACT: In order to determine the effect of the electrochemical polarization of K-55 catalyst on the rate of ammonia synthesis, the potential of thin layers of the catalyst was measured during polarization. The experiments were carried out at 375-400°C with a nitrogen-hydrogen mixture of stoichiometric composition; the ammonia was absorbed in a 0.01 N H_2SO_4 solution and back-titrated with methyl red. The current density ranged from 0.04 to 1 $\mu A/cm^2$, and the potential was shifted from 0 to 6 V. A very slight increase in ammonia yield was noted as the cathode potential was raised. It is concluded that the substantial increase in ammonia yield (by a factor of 2-2.5) observed earlier by other authors when strong fields were applied to the electrode must be directly related to the influence of the fields on the catalytic reaction, and

UDC: 541.128.13.037+542.91 : 546.171.1

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L 24500-66

ACC NR: AP6002167 O

is not due to electrolysis phenomena in the glass. During polarization, only the portions of the porous catalyst electrode which are directly adjacent to the glass become partially activated. Orig. art. has: 1 figure.

SUB CODE: 07/ SUBM DATE: 03Feb65/ ORIG REF: 003/ OTH REF: 000

Card 2/2 LC

ACC NR: AP7004656 SOURCE CODE: UR/0432/66/000/001/0029/0030

AUTHOR: Dmitrenko, L. P.

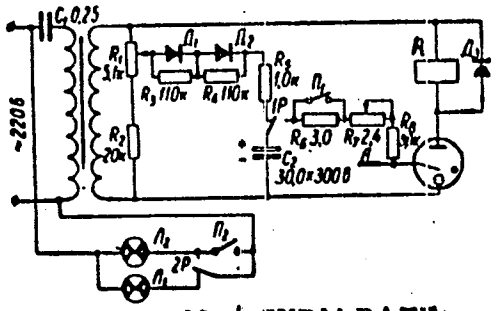
ORG: none

TITLE: Cold-cathode-tube-type time relay

SOURCE: Mekhanizatsiya i avtomatizatsiya upravleniya, no. 1, 1966, 29-30

TOPIC TAGS: time relay, timer, cold cathode tube

ABSTRACT: Developed by the Institute of Mechanization and Electrification of Agriculture, the new timer depends for its operation on a glow-discharge cold-cathode tube (MTKh-90); the timer is intended for measuring time in photo-print processing. The conduction state of the tube (see figure) is maintained by pre-charged capacitor C_2 discharging through the tube's grid circuit. By touching pin A with finger, the tube is fired and relay R is energized. After C_2 has been sufficiently discharged (1—100 sec), the tube becomes nonconductive, and relay R is released. The relay controls a 500-w incandescent lamp of an enlarger. Orig. art. has: 1 figure.



SUB CODE: 09 / SUBM DATE: none

Card 1/1 UDC: 621.318.562.7

OKISHEV, A.P.; DMITRENKO, L.S. (Kiyev)

Use of hexonium in the treatment of gastric ulcer. Vrach. delo no.8:14-20 Ag '61. (MIRA 15:3)

(AMMONIUM COMPOUNDS, SUBSTITUTED)
(HEXONIUM) (STOMACH--ULCERS)

DMITRENKO, L. V., Cand. Chem. Sci. (diss) "Chromatographic Method of Separation for Ion-Exchange Resins of Substances Forming Dipolar Ions (Antibiotics Al'bomitsin, Hormone Insulin.)." Leningrad, 1961, 12 pp (Leningrad Chem-Pharmac. Instit.) 200 copies (KL Supp 12-61, 255).

DMITRENKO, L. V.

with G. V. Samsonov and R. B. Ponomareva "Particulars on the chromatographic purity determination of protein"

report presented at the 10th All-Union Conf. on Highly Molecular Compounds, Biologically Active Polymer Compounds, Moscow, 11-13 June 1958. (Vest.Ak Nauk SSSR, 1958, No. 9, pp. 111-113)

SAMSONOV, G.V.; DMITRENKO, L.V.; SIROTA, A.G.; GORYUNKOVA, A.D.; MOROZOVA, I.G.; KLIKH, S.F.; SHESTERIKOVA, M.P.

Purification of albomycin by using chromatographic method on sulfo-cationites. Antibiotiki 3 no.2:90-94 Mr-Ap '58. (MIRA 12:11)

1. Leningradskiy khimiko-farmatsevticheskiy institut, i Institut vysokomolekulyarnykh soyedineniy AN SSSR.
(ANTIBIOTICS,
albomycin, chromatographic purification with sulfo-cation exchange resistance (Rus))
(ION EXCHANGE RESINS,
sulfo-cation exchange resin SDV-3, chromatographic purification of albomycin (Rus))

SAMSONOV, G.V.; GLIKINA, M.V.; PONOMAREVA, R.B.; YURCHENKO, V.S.; GUDKIN, L.R.; KUZNETSOVA, N.P.; DMITRENKO, L.V.; ZAYTSEVA, A.D.

Transformations of polypeptides and synthesis of the peptide bond on ion exchange resins. Biokhimiia 25 no.5:964-973 S-O '60. (MIRA 14:1)

1. Institute of High Polymer Compounds, Academy of Sciences of the U.S.S.R., Leningrad.
(ION EXCHANGE) (PEPTIDES)

LIBERMAN, L.L.; DMITRENKO, I.V.; Prinimal uchastiye [illegible]ROSHEVSKIY, Yu.A.

Isolation of substances with insulin activity from the blood plasma and urine with the aid of ion-exchange resins. Vop. med. khim. 8 no.4:420-423 Jl-Ag '62. (MIRA 17:11)

1. Endokronologicheskaya laboratoriya Instituta akusherstva i ginekologii AMN SSSR i laboratoriya kolloidnoy khimii Instituta vysokomolekulyarnykh soyedineniy AN SSSR, Leningrad.

KALNIN'SH, K.K.; MOSKVICHEV, B.V.; DMITRENKO, L.V.; BELEN'KIY, B.G.; SAMSONOV, G.V.

Infrared spectra of amino acids in a sorbed state. Izv. AN SSSR. Ser.khim. no.10:1897-1899 '65. (MIRA 18:10)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.

GRANATUROV, M.P.; DMITRENKO, M.A.

Quantitative determination of the alkaloids in the Thermopsis herb. Apt.delo 9 no.2:48-49 Mr-Ap '60. (MIRA 13:6)
(ALKALOIDS)

POPOVA, T.I.; MOZGOVOY, A.A.; DMITRENKO, M.A.

Study of the biology of Ascaridata in White Sea animals. Trudy Gel'm. lab. 14:163-169 '64. (MIRA 17:10)

DMITRENKO, M.T.

Changes in carbohydrate metabolism in acute toluene poisoning. Farm.i toks. 17 no.1:39-43 Ja-F '54. (MLRA 7:5)

1. Laboratoriya biokhimii (zaveduyushchiy - kandidat meditsinskikh nauk S.R.Frenkel') Ukrainskogo tsentral'nogo instituta gigiyeny truda i profzabolevaniy. (Carbohydrate metabolism)
(Toluene--Toxicology)

DMITRENKO, M. T.

DMITRENKO, M. T.- "Materials on the Effects of Benzol and Its Homologues, Toluol and Xylol, on the Carbohydrate Metabolism," Khar'kov Med.Inst, Khar'kov. 1955 (Dissertations For the Degree of Candidate of Biological Sciences)

SO: Knizhnaya Letopis' No, 26, June 1955, Moscow

DMITRENKO, M.T., kandidat biologicheskikh nauk (Khar'kov)

Changes in some enzyme systems under the effect of silicon in silicosis. Vrach.delo no.6:629 Je '57. (MLRA 10:8)

1. Biokhimicheskaya laboratoriya (zav. - kandidat meditsinskikh nauk S.R.Frenkel') Ukrainskogo instituta gigiyeny truda i professional'nykh zabolevaniy
(LUNGS--DUST DISEASES) (SILICON--PHYSIOLOGICAL EFFECTS)
(ENZYMES)

SOV/118-58-1-2/16

AUTHORS: Dmitrenko, M.T., Kozyrev, V.P., Chernichenko, P.M., and Yatsenko, N.A., Engineers

TITLE: The Mechanization of Labor in Coke By-Product Plants (Mekhanizatsiya truda na koksokhimicheskikh zavodakh)

PERIODICAL: Mekhanizatsiya trudoyëmkikh i tyazhëlykh rabot, 1958, Nr 1, pp 6-10 (USSR)

ABSTRACT: In all newly erected and rebuilt plants of the coke by-product industry, car dumpers, mostly of the stationary rotary type have been set up. All operations in coal depots are fully mechanized; they are supplied with one or several belt conveyers and a bulldozer for the clearing of the depot area. The receiving capacity of a normal coal depot is between 800 and 900 tons per hour, the issuing capacity between 370 and 385 tons per hour. The depot is served by 6 men. During recent years many coke by-product plants have introduced automatic production control and remote control of equipment. All valves at coal and coke loading points are supplied with electric relay mechanisms of the types IMT 25/120 and IMT 100/120. The following additional mechanization means are used; automatic blocking of electric motors

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The Mechanization of Labor in Coke By-Product Plants

in case of emergency; mechanisms for the operating of coal tower shutting devices; mechanisms for the cleaning of coke oven doors; automatic coke drawers, etc.
There are 6 diagrams.

1. Coke--Processing 2. Industrial plants--Equipment
3. Industrial plants---Control systems

DMITRENKO, N. S.

Jun 48

USSR/Engineering
Dryers, Air
Heating, Industrial

"The Working of the Calorifier in the Kudinovsk Plant," Ya. M. Boyarin, N. S. Dmitrenko, Engineers, 2½ pp

"Ogneupory" Vol XIII, No 6

Describes construction of calorifier with sketches. Hot furnace gases pass through tubes, around which air is circulated. Heated air is used for drying bricks, thus saving fuel.

6/49T41

FEDOTOVA, R.D.; MOROZ, V.F.; PARUTA, V.T.; VEYLINSON, L.I.; VOROB'YEV, A.A.; DEMCHENKO, I.I., red.; IVANCHUK, P.K., red.; RADUL, M.M., red.; SHARGORODSKIY, T.I., red.; DMITRENKO, N.Z., red.; MANDEL'BAUM, M.Ye., tekhn. red.

[Some problems in developing the wall materials industry in the Moldavian S.S.R. in 1959 - 1965] Nekotorye voprosy razvitiia promyshlennosti stenovykh materialov v Moldavskoi SSR v 1959 - 1965.gg. [By] R.D.Fedotova i dr. Kishinev, Izd-vo "Shtiintsa" Moldavskogo filiala AN SSSR, 1960. 229 p. (MIRA 17:2)

TON, David Semenovich; DMITRENKO, N.Z., red.; LEDVICH, M.M., tekhn. red.

[Socialist competition and the problems of the economics of an enterprise] Sotsialisticheskoe sorevnovanie i voprosy ekonomiki predpriiatii. Kishinev, Izd-vo "Shtiintsa," 1961. 45 p. (MIRA 15:6)

(Moldavia--Socialist competition)
(Moldavia--Industrial management)